Environment Code of Practice

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Uzbekistan: Science, Technology, Engineering, and Mathematics in Secondary Education Project

Prepared by the Ministry of Pre-school and School Education of Uzbekistan for the Asian Development Bank (ADB).

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I. INTRODUCTION

A. Project Background

1. The Science, Technology, Engineering, and Mathematics (STEM) in Secondary Education Project is aligned with the overarching goal of strengthening human capital to enhance the country's overall competitiveness. It aims to achieve the following outcome: secondary education students equipped with relevant skills required that enable them to succeed in an evolving and diverse labor market. This will be achieved through the following key outputs.

2. **Output 1: Enhanced Quality of STEM Education through Technology**. This output improves STEM education for grades 5–11 by nation wide teacher training based on modernized curricula, updated teaching materials, and assessments. It includes training teachers in 200 schools, implementing interdisciplinary STEM learning using technology in 14 schools, and developing digital platforms with e-content to support both formal and informal learning.

3. **Output 2: Improved Learning Environments.** This output aims to upgrade facilities in 200 project schools, turning them into resource centers. Improvements include modern science labs, ICT infrastructure, internet connectivity, and energy-efficient, climate-resilient features. It also supports the provision of equipment for students with disabilities and the creation of a multimedia center for students and teachers.

4. **Output 3: Strengthened STEM Network and Inclusive Learning Capacity** This output fosters a supportive STEM ecosystem by establishing a network of 200 schools as resource hubs, strengthening teacher training institutions, introducing effective practices in project schools, and promoting inclusivity. It also builds school management capacity, enhances career counseling—especially for girls—and supports campaigns to encourage STEM careers.

5. All physical works under Output 2 will take place within the premises of existing schools and institutions. The project is classified as Category C for environment, as most components involve limited to no civil works to achieve the intended outputs. However, for components that do require some works to be completed——appropriate environmental safeguards will be applied. Specifically, the implementation of an Environmental Code of Practice (ECoP) will be included in contractor agreements to ensure good environmental management during construction. While environmental impacts are expected to be minimal and confined within existing site boundaries, it is recommended to periodically reconfirm the project's environmental categorization to ensure that any unforeseen or cumulative impacts do not warrant a reclassification.

B. Objective of preparation Environmental Code of Practices

6. The objective of preparation of the ECoP is to address less significant environmental impacts and all general refurbishment and/or construction related impacts of the proposed project implementation. The ECoP will be provided as part of the guidelines for the best operating practices and included in the procurement documentation to be followed by the contractors for sustainable management of all environmental issues. This ECoP will be annexed in the general conditions of all contracts carried out under the project.

7. The list of ECoPs prepared for the STEM in Secondary Education Project is given below:
   (i) ECoP 1: Waste Management
   (ii) ECoP 2: Fuels and Hazardous Goods Management

(iii) ECoP 3: Water Resource Management
(iv) ECoP 4: Air Quality Management
(v) ECoP 5: Noise and Vibration Management
(vi) ECoP 6: Road Transport and Road Traffic Management
(vii) ECoP 7: Construction Camp Management
(viii) EcoP 8: Community and Worker's Health and Safety
(ix) ECop 9: Asbestos Management

Table 1. Environmental Code of Practices 1: Waste Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
General Waste	Soil and water pollution from the improper management of waste materials and excess materials from the construction sites.	The Contractor shall: • develop waste management plan for various specific waste streams (e.g., reusable waste, flammable waste, construction debris, food waste etc.) prior to commencing of construction and submit to implementing agency for approval; • organize disposal of all waste materials generated during construction in an environmentally acceptable manner. This will include consideration of the nature and location of disposal site to cause less environmental impact; • provide sufficient space for safe storage of waste materials before it is removed; • minimize the production of waste materials by 3R (Reduce, Recycle and Reuse) approach; • segregate and reuse or recycle all the waste materials, wherever practical; • ensure that properly signed waste containers are placed in convenient waste disposal locations; • prohibit burning solid waste; • collect and transport non-hazardous waste materials to all the approved disposal sites. The sites for waste disposal shall be agreed with the local municipal authorities. The specialized company will be contracted to ensure collection of domestic and general waste from camps (in case of campsite arrangement) and temporary storage areas and transportation to the landfills; • vehicles transporting solid waste shall be covered with tarps or nets to prevent spilling waste along the route; • provide refuse containers at each worksite; • train and instruct all personnel in waste management practices and procedures as a component of the environmental induction process; and • place a high emphasis on good housekeeping practices
Hazardous Waste	Health hazards and environmental impacts due to improper hazardous waste management practices	The Contractor shall: • collect chemical wastes in 200-liter drums (or similar sealed container), appropriately labeled for safe transport to an approved chemical waste depot; • store, transport, and handle all chemicals avoiding potential environmental pollution; • store all hazardous wastes in bunded areas away from watercourses;

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		• make available Material Safety Data Sheets (MSDS) for hazardous materials on site during construction; • collect hydrocarbon wastes, including lube oils, for safe transport off-site for reuse, recycling, treatment or disposal at the temporary storage sites and further at the locations approved by Ministry of Natural Resources of Uzbekistan or pass it to the licensed operator, having environmental permit on operation of the hazardous wastes; • construct concrete or other impermeable flooring to prevent seepage in case of spills; and • ensure all government legislation regarding waste is being followed.
	Handling and disposal of asbestos containing materials (ACM). See also Table 9, Asbestos Management for a more detailed plan.	The Contractor shall: • ensure any construction materials with asbestos will not be used in the upgrade and/or rehabilitation of schools; • ensure any work in the workplace and surrounding communities, including asbestos-related work, meets the national legislation and obligations and follows requirements for international best practice; • liaise with relevant project development stakeholders to ensure the safety and wellbeing of surrounding communities against exposure from ACM from their workplace; • ensure that workers and other subcontractors are adequately trained in conducting their work, recognizing potential ACM in the workplace and any work with potential asbestos exposure; and • asbestos risk related mitigated measures through the various control measures provided in Good Practice Guidance for the Management and Control of Asbestos: Protecting Workplaces and Communities from Asbestos Exposure Risks | Asian Development Bank.[a]
	Hazardous materials used in the manufacturing of **solar panels and** during the decommissioning phase, a large amount of hazardous waste is expected to be generated due to the composition of the sun panels used.	Potential adverse impacts to various resources associated with the construction, operation, and decommissioning of solar plants or panels are briefly outlined below: **Land disturbance and/or land use impacts:** Solar facilities may interfere with existing land uses, such as grazing, horse and burro management, etc. Solar facilities could impact on the use of nearby specially designated areas such as wilderness areas, areas of critical environmental concern, or special recreation management areas. Proper siting decisions can help to avoid land disturbance and land use impacts. • **Impacts to soil, water, and air resources:** Construction of solar facilities on land requires clearing and grading, and results in soil compaction, potential alteration of drainage channels, and increased runoff and erosion. Engineering methods can be used to mitigate these impacts. Use of or spills of chemicals at solar facilities (for example, dust suppressants, dielectric fluids, herbicides) could result in contamination of surface or groundwater. The construction

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		and operation of solar facilities generates particulate matter, which can be a significant pollutant particularly in any nearby areas. • **Ecological impacts:** The clearing and use of areas of land for installation of solar power facilities can adversely affect native vegetation and wildlife in many ways, including loss of habitat; interference with rainfall and drainage; or direct contact causing injury or death. The impacts are exacerbated when the species affected are classified as sensitive, rare, or threatened and endangered. • **Other impacts:** Cultural and paleontological artifacts and cultural landscapes may be disturbed by solar facilities. Proper siting decisions can help to avoid aesthetic impacts to the landscape. • **Photovoltaic panels may contain hazardous materials**, and although they are sealed under normal operating conditions, there is the potential for environmental contamination if they were damaged or improperly disposed upon decommissioning. Concentrating solar power systems may employ materials such as oils or molten salts, hydraulic fluids, coolants, and lubricants, that may be hazardous and present spill risks. Proper planning and good maintenance practices can be used to minimize impacts from hazardous materials. • **Hazardous waste generation** during the decommissioning phase of the project, a large amount of hazardous waste is expected to be generated due to the composition of the sun panels used. Although the said process is expected in about 25-30 years, based on current waste management practices in Uzbekistan, it is necessary to make preliminary arrangements as early as possible.

[a] Asian Development Bank. 2022. *Good Practice Guidance for the Management and Control of Asbestos. Protecting Workplaces and Communities from Asbestos Exposure Risks.*

Table 2. Environmental Code of Practices 2: Fuels and Hazardous Goods Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Fuels and hazardous goods	Materials used in refurbishment and/or construction have the potential to be a source of contamination. Improper storage and handling of fuels, lubricants, chemicals and hazardous goods and/or materials on-site, and potential spills from these goods and/or vehicles may harm the environment or health of construction workers.	The Contractor shall: • prepare a "Hazardous Materials Spill Control Procedures" and submit the plan for implementing agency approval and train staff in its use, • train the relevant construction personnel in handling of fuels and spill control procedures, and • store dangerous goods in bunded areas on a top of a sealed plastic sheet minimum 100 m away from watercourses. All refueling operations on the working sites will use absorbent pads and/or straw to minimize spills, which will be put in place prior to the commencement of refueling operations.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		• Ground water and surface water pollution risk will be reduced or eliminated in case of immediate removal of polluted ground. • Soiled ground and absorbents will be removed, stored and treated as hazardous waste. • In case of significant spill authorized and responsible person will be informed, works will be stopped till the elimination of pollution risk. • Refueling will always be carried out with the correct equipment (i.e. nozzles of the appropriate size), and only by suitably trained and experienced Refueling Operators. • In the case of storage of diesel fuel on a work site, it shall be distributed from pressure tanks surrounded by impermeable earthen ramparts. The height of the shafts must guarantee the preservation of 110% of the volume of fuel stored on the site. From the base of the tank installation area, a drain into the oil-cleaning separator shall be ensured. • Other fuels and lubricants should be stored in barrels of 200 liters or less, in an area enclosed by an earthen shaft or in closed lockable containers capable of containing leakage from the largest barrel plus 10% of the volume of the next largest barrel. • Refueling on the site should be carried out from licensed fuel tankers, away from water bodies or other vulnerable areas of the environment. A layer of soil contaminated with more than 5 liters of spilled fuel (or less, in vulnerable areas) should be removed and removed, or reconstituted by other approved methods. • Provide protective clothing, safety boots, helmets. Masks, gloves, goggles, to the construction personnel, appropriate to materials in use.

Table 3. Environmental Code of Practices 3: Water Resource Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Hazardous Material and Water	Water pollution from the storage, handling and disposal of hazardous materials and general construction waste, and accidental spillage.	Mitigating measures developed to protect the quality of water resources should protect streams, rivers and other bodies of water located on the project site from significant and/or permanent deterioration of the initial quality as a result of construction. Measures to protect the quality of water resources may include the following: • Follow the management guidelines proposed in ECoPs 1 and 2 • Dumps of potential water pollutants (e.g. bitumen, oils, building materials, garbage, fuel, etc.) should be located in such a way as to minimize the likelihood of pollutants entering water bodies or stormwater runoff. • Minimize the generation of sediment, oil and grease, excess nutrients, organic matter, litter, debris and any form of waste (particularly petroleum and chemical

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		wastes). These substances must not enter waterways, storm water systems or underground water tables. • Stormwater effluents from fuel storage areas, workshops and transport parking lots, before discharging into any body of water, should be diverted to an oil cleaning separator. All oil-cleaning separators should be cleaned regularly after 20 mm of precipitation has fallen. • Cleaning/washing of equipment and vehicles used under the Project should not be carried out in places where untreated wastewater can enter closely spaced streams or manifolds. • Drainage drains over all sensitive areas (excavation or dump storage) should be constructed prior to the commencement of major excavation work to intercept and divert storm water from these zones to stable reservoirs at a rate of water that does not cause erosion.
Discharge from construction sites	During construction both surface and groundwater quality may be deteriorated due to sewerages from construction sites and work camps (in case if camp is constructed).	The Contractor shall: • Install temporary sediment basins, where appropriate, to capture sediment laden run-off from site • Stockpile materials away from drainage lines • Prevent all solid and liquid wastes entering waterways by collecting solid waste, oils, chemicals, bitumen spray waste and wastewaters from brick, concrete and asphalt cutting where possible and transport to approved waste disposal site or recycling depot • Wash out ready-mix concrete agitators and concrete handling equipment at washing facilities off site or into approved bunded areas on site. • Ensure that tires of construction vehicles are cleaned in the washing bay (arranged at the entrance of the construction site) to remove the mud from the wheels. This should be done in every exit of each construction vehicle.

Table 4. Environmental Code of Practices 4: Air Quality Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Construction vehicular traffic	Air quality can be adversely affected by vehicle exhaust emissions and combustion of fuels.	Measures to maintain air quality should ensure that construction work does not have an impact on nearby settlements and the environment. During construction work, the main task is to combat dust, first of all, by preventing its formation. The Contractor should: • fit vehicles with appropriate exhaust systems and emission control devices. Maintain these devices in good working condition; • operate the vehicles in a fuel-efficient manner; • cover haul vehicles carrying dusty materials (cement) moving outside the construction site;

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		• impose speed limits on all vehicle movement at the worksite to reduce dust emissions; • control the movement of construction traffic; • service all vehicles regularly to minimize emissions; and • materials will be transported to site in off peak hours.
Construction Machinery	Air quality can be adversely affected by vehicle exhaust emissions and combustion of fuels.	The Contractor shall: • fit machinery with appropriate exhaust systems and emission control devices. Maintain these devices in good working condition in accordance with the specifications defined by their manufacturers to maximize combustion efficiency and minimize the contaminant emissions. Proof or maintenance register shall be required by the equipment suppliers and contractors/ subcontractors; and • provide filtering systems, duct collectors or humidification or other techniques (as applicable) to the concrete batching and mixing plant to control the particle emissions in all its stages, including unloading, collection, aggregate handling, cement dumping, circulation of trucks and machinery inside the installations
Construction activities	Dust generation from construction sites, material stockpiles and access roads are a nuisance in the environment and can be a health hazard.	The Contractor shall: • remove soil piles from water and wind erosion by covering them with geotextile cloth, or by using mulchers to minimize wind erosion; • water the material stockpiles, access roads on an as required basis to minimize the potential for environmental nuisance due to dust; • restore disturbed areas as soon as practicable by vegetation/grass-turfing; • establish adequate locations for storage, mixing and loading of construction materials, in a way that dust dispersion is prevented because of such operations; • cover with a tarpaulin all bulk materials during transportation (soil and other loose materials and soil) on access roads outside the site; and • reduce of exhaust gases from construction equipment through regular maintenance of all construction equipment and vehicles.

Table 5. Environmental Code of Practices 5: Noise and Vibration Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Construction vehicular traffic	Noise quality will be deteriorated due to vehicular traffic	Refurbishment and/or construction works often require measures to limit or mitigate the potential harmful effects of noise and vibration on local communities. Noise and vibration can also affect fauna and disrupt natural breeding and feeding sites in regions.

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		The Contractor shall: • ensure that typical criteria for determining an acceptable noise level are: 45 dB(A) at the boundary of residential areas at night and 55 dB(A) during daylight hours are met; • operators of noisy equipment or any other workers in the immediate vicinity of excessively noisy equipment should be provided with hearing protection; • in conditions of noise, operators and other workers should not be allowed to exceed the established norm of being in a noisy environment; • maintain all vehicles to keep it in good working order in accordance with manufactures maintenance procedures • make sure all drivers will comply with the traffic codes concerning maximum speed limit, driving hours, etc; • organize the loading and unloading of trucks, and handling operations for the purpose of minimizing construction noise on the work site; • as far as possible, the maximum distance between noisy equipment and nearby sensitive objects should be ensured in order to mitigate noise to an acceptable level; and • consult with local residents and building owners to address issues of concern to the public.
Construction machinery	Noise and vibration may have an impact on people and property	The Contractor shall: • appropriately site all noise generating activities to avoid noise pollution to local residents; • maintain all equipment to keep it in good working order in accordance with manufactures maintenance procedures. Equipment suppliers and contractors shall present proof of maintenance register of their equipment; • install acoustic enclosures around generators to reduce noise levels if appropriate; and • fit high efficiency mufflers to appropriate construction equipment.
Refurbishment and/or construction activity	Noise and vibration may have an impact on people and property. Hazardous driving conditions where construction interferes with preexisting roads.	The Contractor shall: • notify adjacent landholders prior to any typical noise events outside of daylight hours; • employ best available work practices on-site to minimize occupational noise levels; • install temporary noise control barriers where appropriate; • notify affected people if major noisy activities will be undertaken e.g. unloading; • plan activities on site and deliveries to and from site to minimize impact; • monitor and analyze noise and vibration results and adjust construction practices as required; and

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		• as works will be largely conducted outside daylight hours, ensure access and egress is done in a way to avoid noise to local residents.

Table 6. Environmental Code of Practices 6: Road Transport and Road Traffic Management

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management

Construction vehicular traffic	Increased traffic use of road by construction vehicles will affect the movement of normal road traffics and the safety of the road-users.	The Contractor shall:
		• prepare and submit a traffic management plan covering delivery of oversized loads and other site materials and waste management to implementing agency and/or PIU for approval before commencing work on any project component involved in traffic diversion and management;
		• include in the traffic management plan to ensure uninterrupted traffic movement during construction the detailed drawings of traffic arrangements showing all detours, temporary road, necessary barricades, warning signs and/or lights, road signs, etc;
		• provide signs at strategic locations of the roads complying with the schedules of signs contained in the Uzbekistan Traffic Regulation; and
		• install and maintain a display board at each important road intersection on the roads to be used during delivery of oversized loads, which shall clearly show the following information:
		  • Location: Street name.
		  • Date of delivery of oversized load.
		  • Suggested detour route map.
		  • Name and contact address/telephone number of the Contractor.

	Accidents and spillage of fuels and chemicals	The Contractor shall: • restrict the transport of oversize loads; • operate road traffics/transport vehicles, if possible, to nonpeak periods to minimize traffic disruptions; • design and implement safety measures and an emergency plan to contain damages from accidental spills; and • designate special routes for hazardous materials transport (if necessary).

Table 7. Environmental Code of Practices 7: Construction Camp Management (in case if there will be need for construction and/or establishment of camp site)

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Siting and location of construction camp (if applicable)	Construction camps are the important locations that have significant impacts such as	The Contractor shall:

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
	health and safety hazards on local resources and infrastructure of nearby communities	• locate the construction camps at areas which are acceptable from environmental, cultural or social point of view; • consider the location of construction camps away from communities to avoid social conflict in using the natural resources such as water or to avoid the possible adverse impacts of the construction camps on the surrounding communities; • submit to implementing agency and/or PIU for approval a detailed layout plan for the development of the construction camp showing the relative locations of all temporary buildings and facilities that are to be constructed together with the location of site roads, fuel storage areas (for use in power supply generators), solid waste management and dumping locations, and drainage facilities, prior to the development of the construction camps; and • inform local authorities responsible for health, religious and security on the set up of camp facilities to maintain effective surveillance over public health, social, and security matters.
Construction Camp Facilities	Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards.	The contractor shall provide the following facilities in the campsites: • adequate temporary housing provision with required facilities for workers from other regions; • safe and reliable water supply; • hygienic sanitary facilities and sewerage system; • treatment facilities for sewerage of toilet and domestic wastes; • storm water drainage facilities; and • in-house community and/or common entertainment facilities, dependence of local entertainment outlets by the construction camps to be discouraged and/or prohibited to the extent possible.
Disposal of waste	Management of waste materials is crucial to minimizing impacts on the environment.	The Contractor shall: • ensure proper collection and disposal of solid wastes within the construction camps; • store inorganic wastes in a safe place within the household and clear organic wastes on daily basis to waste collector; • establish waste collection, transportation and disposal systems with the manpower and equipment and/or vehicles needed; and • collect and remove all solid waste materials from the work camps and dispose in approved disposal sites.
Health and Hygiene	Health issues from workers could spread disease to the local community or place a burden on local health care system	The Contractor shall: • provide adequate health care facilities within construction sites; • provide first aid facilities round the clock. Maintain stock of medicines in the facility and appoint full-time designated first aider or nurse;

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		• provide ambulance facility for the laborers during emergency to be transported to nearest hospitals; • perform initial health screening of the laborers coming from outside areas; • train all construction workers in basic sanitation and health care issues and safety matters, and on the specific hazards of their work; • provide HIV awareness programming, including STI (sexually transmitted infections) and HIV information, education and communication for all workers on regular basis; • provide adequate drainage facilities throughout the camps to ensure that disease vectors such as stagnant water bodies and puddles do not form; and • carry out short training sessions on best hygiene practices to be mandatorily participated by all workers. Place display boards at strategic locations within the camps containing messages on best hygienic practices.
Safety	In adequate safety facilities to the construction camps may create security problems and fire hazards	The Contractor shall: • provide appropriate security personnel (police / home guard or private security guards) and enclosures to prevent unauthorized entry in to the camp area; • maintain a register to keep a track on a head count of persons present in the camp at any given time; • encourage use of flame proof material for the construction of labor housing and/or site office. Also, ensure that these houses and/or rooms are of sound construction and capable of withstanding high winds / storms; • provide appropriate type of firefighting equipment suitable for the construction camps; • display emergency contact numbers clearly and prominently at strategic places in camps; and • communicate the roles and responsibilities of laborers in case of emergency in the monthly meetings with contractors.
Site Restoration	Restoration of the construction camps to original condition requires demolition of construction camps	The Contractor shall: • dismantle and remove from the site all facilities established within the construction camp including the perimeter fence and lockable gates at the completion of the construction work; • dismantle camps in phases and as the work gets decreased and not wait for the entire work to be completed; • give prior notice to the laborers before demolishing their camps and/or units; • maintain the noise levels within the Georgian standards during demolition activities;

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		• restore the site to its condition prior to project operation or to an agreed condition with the landowner; • revegetation may include grassing or planting the area with trees and shrubs. The selection of species, should be compatible with the local conditions and use requirements. Care must be taken in the selecting the species so that invasive plant species are not accidentally introduced.

Table 8. Environmental Code of Practices 8: Community and Worker's Health and Safety

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
Best Practices	Refurbishment and/or construction works may pose health and safety risks to the surrounding communities, construction workers and site visitors leading to severe injuries and deaths. The construction workers and **schoolchildren** and to a lesser extent, the local community will be exposed to a number of (i) biophysical health risk factors, (e.g. noise, dust, chemicals, construction material, solid waste, waste water, vector transmitted diseases etc), (ii) risk factors resulting from human behavior (e.g. STD, HIV etc) and (iii) road accidents from construction traffic.	The Contractor shall: • implement suitable safety standards for all workers and site visitors which should not be less than those laid down on the international standards (e.g. International Labor Office guideline on 'Safety and Health in Construction; World Bank Group's 'Environmental Health and Safety General Guidelines, 2007') and contractor's own national standards or statutory regulations; • provide the workers with a safe and healthy work environment, taking into account inherent risks in its particular construction activity and specific classes of hazards in the work areas focusing on night working, rail lines, high voltage systems and confined spaces; • provide personal protection equipment (PPE) for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields, and ear protection.; • maintain the PPE properly; • ensure safety procedures include provision of information, training and protective clothing to workers involved in hazardous operations and proper performance of their job; • appoint an environment, health and safety manager to look after the health and safety of the workers; • inform communities via informing the local authorities responsible for health, religious and security duly informed before commencement of civil works and establishment of construction camps so as to maintain effective surveillance over public health, social and security matters; and • ensure the Grievance Redress Mechanism (GRM) is in place and operational.
Accidents	Lack of first aid facilities and health care facilities in the immediate vicinity will	Contractor to provide: • appropriately equipped first-aid stations and health care facilities should be easily accessible

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
	aggravate the health conditions of the victims	throughout the place of work and at the Construction Camp; • document and report occupational accidents, diseases, and incidents and keep statistics so that trends can be seen and preventative action taken where needed; • prevent accidents, injury, and disease arising from, associated with, or occurring in the course of work by minimizing, so far as reasonably practicable, the causes of hazards. In a manner consistent with good international industry practice; • identify potential hazards to workers, particularly those that may be life-threatening and provide necessary preventive and protective measures; • provide awareness training to the construction drivers to strictly follow the driving rules; and • Provide adequate lighting in the construction area within the metro tunnels, along access routes, camp and along the access roads (as needed).
Construction Camps	Lack of proper infrastructure facilities, such as housing, water supply and sanitation facilities will increase pressure on the local services and generate substandard living standards and health hazards	The Contractor shall provide the following facilities in the campsites to improve health and hygienic conditions as mentioned in ECoP 7 Construction Camp Management: • adequate ventilation facilities; • safe and reliable water supply; • hygienic sanitary facilities and sewerage system; • storm water drainage facilities; • recreational and social facilities; • safe storage facilities for petroleum and other chemicals in accordance with ECoP 2; • solid waste collection and disposal system in accordance with ECoP 1; • arrangement for trainings; • security fence height; and • sick bay and first aid facilities
Water and sanitation facilities at the construction sites	Lack of Water sanitation facilities at construction sites cause inconvenience to the construction workers and affect their personal hygiene.	The contractor should provide: • portable toilets at the construction sites and drinking water facilities. These portable toilets should be cleaned once a day and all the sewerage should be pumped from the collection tank once a day and should be brought to the common septic tank for further treatment.
Night Working	Lack of night specific health and safety measures could put the safety of workers at risk.	The contractor should provide: • fixed lighting for all construction areas and access routes; • spare battery operated lighting for all staff in case of emergency; • operation of a ‘buddy system’ as far as possible where staff work in pairs; • provision of all staff with mobile communication devices that work in the underground environment;

Project Activity/ Impact Source	Environmental Impacts	Mitigation Measures /Management
		• operate a sign-in sign-out system to ensure that all staff leave the site at the end of each shift and nobody is left behind; and • provide specific training for night working.
Training	Lack of awareness and basic knowledge in health care among the affected communities and construction workforce, make them susceptible to potential diseases.	The Contractor shall: • provide general training for all staff which consist of basic hazard awareness, site specific hazards, safe work practices, and emergency procedures for fire, evacuation, and natural disaster, as appropriate; • deliver safety awareness training to the local communities to increase construction specific and general safety awareness amongst the local communities as appropriate; • train all construction workers in basic sanitation and health care issues (e.g., how to avoid transmission of sexually transmitted infections (STI) HIV/AIDS; • train all construction workers in understanding Sexual Exploitation, Abuse, and Harassment (SEAH) risk factors ensuring that SEAH risks prevention, mitigation, and response measures are effectively implemented for communities and workers; and • Train all construction workers on the specific hazards in relation to their work, which may include (but not be limited to) confined spaces, and night Working.

Table 9. Asbestos Management

Activity / Aspect	Environmental Risk	Targeted Mitigation Measures	Responsible Party	Evidence / Indicator	Timing
Pre-Construction					
Site survey	Potential health risks on workers and the community if asbestos is not properly managed	Upon discovery of asbestos, the construction contractor will: • install fencing posts, warning tape and visible signs warning around the 5-meter radius where asbestos is present • notify the PIU environment and social safeguard staff and arrange an immediate site inspection • PIU environment and social safeguard staff to hire licensed asbestos contractor to verify the findings of construction contractor	Contractor	Contractor's Report	Prior to any demolition

Activity / Aspect	Environmental Risk	Targeted Mitigation Measures	Responsible Party	Evidence / Indicator	Timing

Validation of findings for asbestos	Potential health risks on workers and the community if asbestos is not properly managed	• The licensed asbestos contractor will:
		  • conduct visual inspection of asbestos presence
		  • get one sample per location of suspected asbestos
		  • develop Asbestos Management Plan
		• The licensed asbestos contractor will identify ACM type, quantity, friability, and exact location; and take photographs and map ACM on floor and roof plans.
		• Conduct background Phase Contrast Microscopy (PCM) sample to measure asbestos fiber concentration of air sample
			Licensed asbestos contractor	• Asbestos findings report
				• Asbestos Management Plan
				• PCM sample result
					Prior to any demolition

Consultation with stakeholders	Potential risks on students, school staff and surrounding communities from asbestos fibers	The PIU environment and social safeguard staff will: • Discuss the project's scope, timeline and potential risks and management measures to be implemented	PIU environment staff	Minutes of consultation	Prior to any demolition
Workers training on handling ACM	Potential health risks on workers and the community if asbestos is not properly managed	Toolbox talk on asbestos risk assessment and buddy system	Licensed asbestos contractor PIU safeguard staff	Training of workers conducted	Prior to any demolition
Notification to surrounding communities	Potential health risks on workers and the community if asbestos is not properly managed	• Written leaflets to adjacent households hotline number posted on gate. Warning signs with notice "Danger: Asbestos Removal – Keep Out" in Uzbek and Russian	Contractor and PIU safeguard staff	Leaflets distributed and notifications installed	Prior to any demolition
Construction Phase					

Demolition, construction and installation works	▪ Dust generation affecting workers, students and staff of schools and surrounding communities.
	▪ Safety hazard from collapse or debris fall
	▪ Waste generation from old roofing, pipe insulation, and
		Licensed asbestos contractor to provide the following equipment:
		  ▪ warning tape
		  ▪ sturdy fence posts and warning notices
		  ▪ shovels
		  ▪ water supply and hose, fitted with garden-type spray attachment
		  ▪ bucket of water and rags
			Licensed asbestos-removal contractor with oversight from PIU safeguard staff	• No visible excessive dust during visits (especially if asbestos, no visible dust release)
				• PPE usage observed/compliance
					During demolition

Activity / Aspect	Environmental Risk	Targeted Mitigation Measures	Responsible Party	Evidence / Indicator	Timing
	other materials containing asbestos, and rubble	▪ sacks of clear, strong polyethylene that can be tied to close ▪ asbestos waste containers (empty, clean, sealable metal drums, clearly labelled as asbestos) Wet down demolition area to control dust (use garden sprayer or hose gently) Provide personal protective equipment (PPE): dust masks, helmets, gloves For roof demolition, enclose the area with tape or barrier; keep people away. Use an elevated platform/ladder with someone steadying it for roof removal to prevent falls Remove debris systematically; do not throw from height and use ropes/buckets or lower gently Place demolition waste in designated pile on-site on tarp, or directly into a truck or waste skip. Cover the waste pile with tarp if left overnight Ensure no new ACM will be procured or installed		(photos or checklist record). • No complaints from neighbors about dust or debris. • Disposal receipts for waste. • Site free of demolition debris after removal	
ACM interim storage prior to transport and disposal	▪ Potential health risks to workers and surrounding communities ▪ Potential contamination of surrounding environment if not secured properly	▪ Ensure to put ACM in double bag (200 µm UN 2590) or double wrap with large sheets ▪ Ensure to put label “Contains Asbestos – Do Not Open” in bag ▪ Update waste register containing bag ID, weight, date and location ▪ Store in locked, shaded corner on plastic-lined pallet.	Licensed asbestos removal contractor	Waste register, photographs of storage area	Immediately after removal, daily check
Transport	Potential risk of exposure to asbestos fibers if not done properly	• Confirm landfill is authorized to accept ACM • Load bags gently and ensure no throwing to prevent damage and release of asbestos fibers	Lcensed asbestos removal contractor	• Acceptance letter from landfill operator • Photograph s of bags loaded with ACM	A day before haulage

Activity / Aspect	Environmental Risk	Targeted Mitigation Measures	Responsible Party	Evidence / Indicator	Timing
		• Bed of truck lined with 200 µm plastic, fastened securely and covered with tarpaulin			
Disposal	Potential risk of exposure to asbestos fibers if not done properly	• Take to facilities authorized to handle hazardous wastes (e.g. special landfills)	Licensed asbestos removal contractor and landfill operator	Signed disposal certificate	During disposal day
Final cleaning of renovated site	Potential risk of exposure to asbestos fibers if not done properly	• HEPA vacuum / damp wipe all surfaces, supports, floor. • Remove enclosure plastic last and bag as ACM waste. • Asbestos disposal contractor to conduct final visual and aggressive air test (target < 0.01 f cm^{-3}).	Licensed asbestos removal contractor	Clearance certificate (check with Ecology and Environmental Protection Committee)	After disposal confirmation
Post Construction Phase					
Discovery of ACM	Leftover debris and unused materials may potentially contain ACM that can still affect workers and community	Repeat the process from pre-construction to construction phase	Licensed asbestos-removal contractor with oversight from Ecology and Environmental Protection Committee and PIU safeguard staff	Clearance certificate	Upon discovery of ACM